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February 23, 2009

Mr. Allen Gaither
North Carolina Department of Environmental and Natural Resources
Division of Waste Management
Solid Waste Section
2090 US Highway 70
Swannanoa, North Carolina 28778

Subject: Buncombe County Solid Waste Management Facility
Buncombe County, North Carolina
C&D Landfill Permit Modification
Response to Comments

Dear Mr. Gaither:

On behalf of Buncombe County, CDM is pleased to submit the response to review comments regarding the Alternative Cover Material Demonstration Reports for the Buncombe County Solid Waste Management Facility. Buncombe County received review comments on January 7, 2009 (see Attachment 1). The following revisions are in response to that review letter and are provided for your review:

1. *Section 6.1, Daily Cover, states the daily cover must be capable of allowing loaded vehicles to successfully maneuver over it after placement. Is the tarp system capable of meeting this requirement?*

   Response:
   Section 6.1 has been revised to remove this requirement and is provided as Attachment 2.

2. *Section 6.3, Alternative Daily Cover, does not list the requirement that the ACM shall not be used more that five consecutive days without placing soil over the previously filled areas. This was a requirement of the demonstration and, will therefore, be a requirement for the continued use of the ACM. The Section recommends soil-only cover on the last operational day of a working week.*

   Response:
   Section 6.3 has been revised and is provided as Attachment 2.

3. *Section 6.3.1.3, Cover System Application Procedures, states the Posi-shell surface will be visually inspected on a daily basis for exposed waste and/or inadequate coverage. How do you define inadequate coverage? The Application Minimum Requirements listed on page 11 of the Posi-shell Advanced Formulation Usage Guide lists a coverage thickness between 1/8inch and 3/16inch for overnight cover.*

   Response:
   Per manufacturer's usage guide and experience in other North Carolina landfills, inadequate cover thickness is typically less than 1/8 inch. Section 6.3.1.3 has been revised and is provided as Attachment 2.

4. *Section 6.3.2.1, Properties of Soil/Mulch Mixture, states unacceptable material includes low carbon nitrogen wastes such as bulk grass clippings. Since 'bulk grass clippings' are considered Yard Trash, the description of unacceptable wastes should include Yard Trash as defined in 15A NCAC 13B.0101(55).*

   Response:
   Section 6.3.2.1 has been revised and is provided as Attachment 2.

5. *Section 6.3.2.2, Cover System Application Procedures, states using a wheel loader, combine one load of mulch and one load of soil. Using this method yields a 50/50 mulch/soil mixture. The plan must describe the procedure used to create a 30/70 mulch/soil mixture.*

   Response:
   Section 6.3.2.2 has been revised to state that the mixture will be prepared using three (3) load of mulch to seven (7) loads of soil. The revised section is provided as Attachment 2.

6. *Section 6.3.2.2, Cover System Application Procedures, states mix soil and mulch load and visually verify that the mixture is adequately commingled. How is adequately commingled measured?*

   Response:
   Adequately commingled is visually verified by the absence of large clumps of either soil or mulch. The revised section is provided as Attachment 2.

CDM

7. *Section 6.3.2.2, Cover System Application Procedures, states the soil/mulch mixture will be stored on-site, outside the landfill limits, at a location determined by the County. However, Andrea Keller was told the mixture was being prepared at the working face. The Operations Plan should accurately reflect the proper procedure for the mixing and storing the ACM.*

   Response:
   Revised Sections 6.3.2 and 6.3.2.2: *Material and Equipment Storage* are provided as Attachment 2.

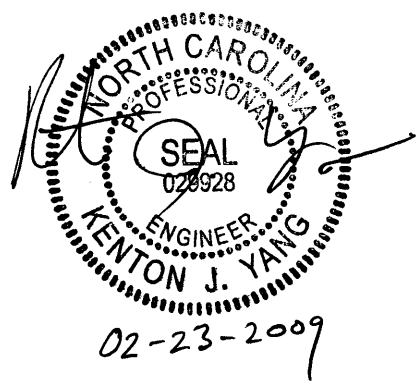
8. *Section 6.3.2.2, Cover System Application Procedures, states the soil/mulch mixture wet weather operations will be similar to the operations the County currently follows when using soil as daily cover during wet weather. The Operations Plan does not provide a procedure for the current wet weather procedure for daily cover.*

   Response:
   Section 6.1.1 has been included and is provided as Attachment 2.

The modification to the Permit to Operate is requested since the Notices of Violation listed in the Facility Compliance Audit Report dated November 3, 2008 have been resolved as of follow-up audits dated December 12, 2008 and January 23, 2009.

If you have any questions or need additional information, please do not hesitate to call me at (919) 787-5620.

Very truly yours,



Kenton J. Yang, P.E.
Camp Dresser & McKee

Enclosures
xc: Ed Mussler, NCDENR SWS
J. Creighton/J. Mears/K. Smith, BCGSD
J. Wiseman, CDM

Attachment 1
NCDENR Technical Review Letter

NCDENR
North Carolina Department of Environment and Natural Resources
Dexter R. Matthews, Director **Division of Waste Management** Michael F. Easley, Governor
William G. Ross Jr., Secretary

SOLID WASTE SECTION

January 7, 2008

Mr. Jerry Mears
Buncombe County - Solid Waste Manager
85 Panther Branch Road
Alexander, North Carolina 28701

Subject: Technical Review Letter
Alternative Cover Material Demonstration Reports
Buncombe County, Permit #11-07, Document ID No. 6502

Mr. Mears:

The Division of Waste Management, Solid Waste Section (Section) has completed the technical review of the following documents:

- *Alternative Cover Material – Posi-shell and Tarps, Demonstration Report and Revised Operations Plan*
- *Alternative Cover Material – 30/70 Mulch/Soil Mixture, Demonstration Report and Revised Operations Plan*

In order to complete the technical review of the Operations Plan the following items require additional information or clarification:

1. Section 6.1, Daily Cover, states *the daily cover must be capable of allowing loaded vehicles to successfully maneuver over it after placement.* Is the tarp system capable of meeting this requirement?
2. Section 6.3, Alternative Daily Cover, does not list the requirement that the ACM shall not be used more that five consecutive days without placing soil over the previously filled areas. This was a requirement of the demonstration and, will therefore, be a requirement for the continued use of the ACM. The Section recommends soil-only cover on the last operational day of a working week.
3. Section 6.3.1.3, Cover System Application Procedures, states *the Posi-shell surface will be visually inspected on a daily basis for exposed waste and/or inadequate coverage.* How do you define inadequate coverage? The Application Minimum Requirements listed on page 11 of the Posi-shell Advanced Formulation Usage Guide lists a coverage thickness between 1/8inch and 3/16inch for overnight cover.
4. Section 6.3.2.1, Properties of Soil/Mulch Mixture, states *unacceptable material includes low carbon nitrogen wastes such as bulk grass clippings.* Since 'bulk grass clippings' are considered Yard Trash, the description of unacceptable wastes should include Yard Trash as defined in 15A NCAC 13B.0101(55).

5. Section 6.3.2.2, Cover System Application Procedures, states u*sing a wheel loader, combine one load of mulch and one load of soil.* Using this method yields a 50/50 mulch/soil mixture. The plan must describe the procedure used to create a 30/70 mulch/soil mixture.
6. Section 6.3.2.2, Cover System Application Procedures, states *mix soil and mulch load and visually verify that the mixture is adequately commingled.* How is adequately commingled measured?
7. Section 6.3.2.2, Cover System Application Procedures, states *the soil/mulch mixture will be stored on-site, outside the landfill limits, at a location determined by the County.* However, Andrea Keller was told the mixture was being prepared at the working face. The Operations Plan should accurately reflect the proper procedure for the mixing and storing the ACM.
8. Section 6.3.2.2, Cover System Application Procedures, states *the soil/mulch mixture wet weather operations will be similar to the operations the County currently follows when using soil as daily cover during wet weather.* The Operations Plan does not provide a procedure for the current wet weather procedure for daily cover.

Finally, regardless of the adequacy of the revisions to the Operations Plan, no modifications to the Permit to Operate will be allowed without complete resolution of the Notices of Violation listed in the Facility Compliance Audit Report dated November 3, 2008.

If you should have any questions regarding this matter please contact me at (828) 296-4703, or by email at allen.gaither@ncmail.net .

Sincerely,

Allen Gaither
Environmental Engineer

Cc: Kenton Yang – Camp, Dresser & McKee
Kristy Smith – Buncombe County
Andrea Keller – SWS/ARO

Attachment 2
Revised Section 6 of the
Operation Plan

Section 6
Cover Material Requirements

6.1 Daily Cover

In accordance with 15A NCAC 13B .1626 (2), the operator of MSWLF units must cover disposed solid waste with six inches of earthen material (or alternative daily cover (ADC) approved by the Solid Waste Section (SWS)) at the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging. The daily cover must:

- be capable of covering solid waste after it is placed without change in its properties and without regard to weather;
- be noncombustible; and,
- not include rock fragments that are greater than six inches in diameter.

6.1.1 Wet Weather Operations

During wet weather, the County will develop a wet weather working face. The wet weather working face will be kept as small as possible. At the end of disposal operations, the County will cover in accordance with Section 6.1.

6.2 Intermediate Cover

In accordance with 15A NCAC 13B .1626 (2), the owner or operator of all MSWLF units must place 12-inches of intermediate cover on all areas which will not have additional waste placed on them for 12 months or more, but where final termination of disposal operations has not occurred. The composition standards of intermediate cover shall be the same as for daily cover in addition to being capable of supporting the germination and propagation of vegetative cover.

6.3 Alternative Daily Cover

Three ADCs are described in this section; Posi-Shell, soil/mulch mixture, and tarps. Each ADC shall provide control for disease vectors, fires, odor, blowing litter, and scavenging. Through SWS required demonstration periods from February 5, 2008 to June 5, 2008 and from July 9, 2008 to November 7, 2008, each ADC has been determined to provide equal or better element control as soil.

ADC shall not be used more than five (5) consecutive days. If ADC is used on four consecutive days, soil cover will be used on the following day.

6.3.1 Posi-Shell

The Posi-Shell Cover System is proposed as an ADC (see Appendix C for Manufacturer's Usage Guide) on waste disposed at the Subtitle D landfill. Posi-Shell provides a thin cover that hardens over the covered waste surface.

6.3.1.1 Properties of Posi-Shell

The properties of each component of Posi-Shell are presented in the Manufacturer's Usage Guide in Appendix C.

6.3.1.2 Cover System Description

As described in the Manufacturer's Usage Guide, the application rate for short-term coverage (overnight cover for daily cover operations) is approximately 8 to 10 square feet per gallon. Assuming the working face is less than one acre (100 feet wide and 400 feet long), the desired load size would be approximately 4,000 gallons. At a minimum, the Posi-Shell material quantities for daily use should be the following:

- 3,200 gallons of liquid (water or leachate),
- 8 bags (15 lbs each) of Posi-Pak,
- 40 bags (50 lbs each) of PSM-200 setting agent, and
- 80 bags (94 lb each) of optional Portland cement.

Posi-Pak is a specially designed plastic fiber with a proprietary finish that provides the reinforcement matrix for the finished cover. PSM-200 setting agent is a blend of clay, polymers, and adhesives that provides thickening, lubrication, and adhesion. Portland cement can be used as a binder component which will help neutralize odors and enhances the durability of the cover system.

6.3.1.3 Cover System Application Procedures

Application Procedure

Application of the Posi-shell will generally follow the manufacturer's recommendation and will employ the following minimum procedures:

- The Posi-shell will be applied in two different directions to avoid spray shadow or wind dispersion;
- The Posi-shell will be applied at the end of each working day;
- The Posi-shell surface will be visually inspected on a daily basis for exposed waste and/or inadequate coverage. Inadequate coverage is generally defined as a thickness of less than 1/8 of an inch.

Areas of exposed waste and/or inadequate coverage will receive an additional application prior to operations ending for that day.

Maximum Daily Area Coverage

Based on the May 2007 Airspace Analysis Report:

- Annual 2007 waste disposal rate (MSW only) = 125,000 tons

- Operating days per year = 284 days
- Approximate daily waste disposal rate = 440 tons
- In-place density = 0.50 tons of MSW per cubic yard
- Daily cubic yards disposed = daily waste disposal rate / in-place density = 880 yd^3 or 23,800 ft^3

The working face will be restricted to the smallest area feasible. The working lift is typically 4 feet high. Based on a working lift thickness of 4 feet, the working face area is 5,400 square feet (daily cubic yards disposed / working lift thickness), which is equal to the daily coverage area.

Daily Depth and Quantity to be Applied

N/A

Average Monthly Volume of Daily Cover

N/A

List of Equipment

Equipment required for the Posi-Shell consists of a standard hydroseeding unit and a towing unit.

Material and Equipment Storage

The material components of Posi-Shell will be housed in the machine shop to minimize the risk of hydration. The spraying equipment will be parked in a County designated area which will not impede daily operations.

Wet Weather Operation

The application of Posi-shell during heavy rain events will be minimized. If Posi-shell is applied during periods of heavy rain, the surface will be visually inspected following the rain event for exposed waste or inadequate coverage.

Contingency Plans

If, for any reason, the County cannot use Posi-Shell as ADC material, soil, a soil/mulch mixture, or tarps will be used.

Screening Criteria

N/A

6.3.2 Soil/Mulch Mixture

A mulch (30% maximum by volume) and soil mixture is proposed as another ADC

material. Mulch will be hauled from the on-site mulching operations and soil will be provided from the County's on-site borrow area. The soil/mulch mixture will be free of petroleum contaminated soils. The materials will be mixed at the borrow area or the working face.

6.3.2.1 Properties of Soil/Mulch Mixture

At the Buncombe County facility, waste segregation occurs at the scale house to prevent the mulch processing of any unacceptable material. Unacceptable material includes construction and demolition debris, potentially contaminated debris, etc. Since waste segregation occurs prior to the waste processing into mulch, the resulting mulch is considered inert.

6.3.2.2 Cover System Application Procedures

Application Procedure

Application of the soil/mulch mixture will employ the following minimum procedures:

- The mixure will be prepared by combining three (3) loads of mulch and seven (7) loads of soil;
- Mix soil and mulch load and visually verify that the mixture is adequately commingled, ensure that there are no large clumps (3 inches in diameter or larger) of either soil or mulch in the mixture;
- Load and haul soil/mulch mixture to active working face using an articulating truck; and
- Use dozer to cover working face with six inches of soil/mulch mixture.

The surface will be visually inspected on a daily basis for exposed waste and/or inadequate coverage. Areas of exposed waste and/or inadequate coverage will receive additional cover.

Maximum Daily Area Coverage

See Section 6.3.1.3.

Daily Depth and Quantity to be Applied

As stated above, **6 inches** of the soil/mulch mixture will be applied to the daily coverage area of 5,400 square feet. Therefore; the required daily quantity of soil/mulch mixture placed is approximately **100 yd^3** (Assuming no other daily cover is used).

Average Monthly Volume of Daily Cover

As stated above, approximately 100 yd^3 per day of soil/mulch mixture will be used.

Assuming 24 working days per month, the average monthly volume of daily cover required for normal operating conditions is **2,400 yd^3**.

List of Equipment

An articulating truck and dozer will be used for the application process.

Material and Equipment Storage

Any soil/mulch mixture requiring storage will be stored at the borrow area. Mulch stock pile sizes shall not exceed 30 feet in width and 15 feet in height to avoid spontaneous combustion and to maintain a manageable pile size in the event of a fire. Landfill equipment used for ADC procedures will be stored at County designated areas.

Wet Weather Operation

The soil/mulch mixture wet weather operation will be similar to the operation the County currently follows when using soil as daily cover during wet weather.

Contingency Plans

If, for any reason, the County cannot obtain mulch for the on-site processing area for use as ADC material, soil, Posi-shell, or tarps will be used.

Screening Criteria

Each soil/mulch mixture load will be visually inspected prior to transport to the working face to determine if the material is adequately mixed. The load will not be placed if the mixture is not commingled adequately or if foreign material is observed.

6.3.3 Tarps

Tarps are proposed as another ADC. The tarps will be placed either manually or by using an automatic tarping machine which uses a spreader bar to lay and roll up the tarps.

6.3.3.1 Properties of Tarps

N/A

6.3.3.2 Cover System Application Procedures

Application Procedure for Manual Placement

Application of the tarp will employ the following minimum procedures:

- Visually inspect working face to ensure that no sharp objects are protruding from the compacted waste which may tear the tarp;
- If necessary, run compacter over any protruding objections;

- Manually roll out tarp and place over working face, the side cables within the tarp and the metal bars on the short ends shall be heavy enough to weigh down the tarp; and
- Place additional tarps as needed to adequately cover working face.

The tarps will be visually inspected following placement to ensure that uplift will not occur. Additional metals bars will be placed if necessary. Soil will be placed over any areas of exposed waste and/or inadequate coverage.

Application Procedure for Equipment Placement

Application of the tarp will employ the following minimum manufacturer's recommended procedures:

- Visually inspect working face to ensure that no sharp objects are protruding from the compacted waste which may tear the tarp;
- If necessary, run compacter over any protruding objections;
- Using an automatic tarping machine, install tarp directly on working face, the side cables within the tarp and the metal bars on the short ends shall be heavy enough to weigh down the tarp; and
- Lay additional tarps as needed to adequately cover working face.

The tarps will be visually inspected following placement to ensure that uplift will not occur. Additional metals bars will be placed if necessary. Soil will be placed over any areas of exposed waste and/or inadequate coverage.

Maximum Daily Area Coverage

See Section 6.3.1.3.

Daily Depth and Quantity to be Applied

N/A

Average Monthly Volume of Daily Cover

N/A

List of Equipment

An automatic tarping machine and dozer will be used for the tarp installation.

Material and Equipment Storage

The automatic tarping machine and tarp will be stored in a County designated area that will not conflict with daily haul and disposal operations.

Wet Weather Operation

The tarping wet weather operation will be similar to the operation the County currently follows when using soil as daily cover during wet weather.

Contingency Plans

If, for any reason, the County cannot use tarps as ADC, soil, Posi-shell, or a soil/mulch mixture will be used.

Screening Criteria

N/A